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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,123	03/27/2001	Frank Sauer	2001P05535US	8633

7590 03/25/2003
Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, NJ 08830

EXAMINER	
GOOD JOHNSON, MOTILEWA	
ART UNIT	PAPER NUMBER

2672

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

5x

Office Action Summary	Application No.	Applicant(s)	
	09/818,123	SAUER, FRANK	
	Examiner	Art Unit	
	Motilewa A. Good-Johnson	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the following communications: Application, filed 03/27/2001.
2. Claims 1-14 are pending in this application. Claims 1 and 8 are independent claims. No claims have yet been amended.
3. The present title of this application is "Augmented Reality Guided Instrument Positioning with Depth Determining Graphics" (as originally filed).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Poston et al., *Dextrous Virtual Work*, Communications of the ACM, May 1996, pages 37-45.

As per independent claim 1, a method for augmented reality guided instrument positioning, comprising the steps of: determining at least one graphics proximity marker for indicating a proximity of a predetermined portion of an instrument to a target; Poston discloses estimating the proximity of an object, page 30, paragraph 3; and rendering the at least one graphics proximity marker such that the proximity of the predetermined portion of the instrument to the target is ascertainable . . . Poston discloses color

markers to match the virtual tool to the position of the colored marker at stereo coordinates, page 40.

With respect to dependent claim 2, determining an optimal location for the predetermined portion of the instrument with respect to the target; and calculating the proximity of the predetermined portion of the instrument to the target based on the optimal location. Poston discloses selecting a virtual tool and determining a chosen position and displaying a highlighted path showing the path of the tool inserted with the frame displayed, page 42.

With respect to dependent claim 3, determining an optimal range of locations for the predetermined portion of the instrument with respect to the target; and calculating the range of proximity of the predetermined portion of the instrument to the target . . . Poston discloses using a contour editor to track and quantify motion with tags, page 43.

With respect to dependent claim 4, the proximity corresponds to a final forward position of the predetermined portion of the instrument with respect to the target. Poston discloses a probe inserted to the frame, page 42.

With respect to dependent claim 5, proximity comprises a first measure of proximity for indicating an outer surface of a target volume and a second measure of proximity for indicating an inner portion of the target volume. Poston discloses tag lines for inner and outer contours of the object in slices, page 43.

With respect to dependent claim 6, proximity comprises a first measure of proximity for indicating a front portion of a target volume and a second measure of proximity for indicating a back portion of the target volume, the front portion

corresponding to entering the target volume . . . Poston discloses using the virtual to slice through a virtual frame having volume, page 42.

With respect to dependent claim 7, determining at least one graphics path marker for identifying at least one path for the instrument to the target; and rendering the at least one graphics path marker . . . Poston discloses color markers to match the virtual tool to the position of the colored marker at stereo coordinates, page 40.

As per independent claim 8 and dependent claims 9-14, they are rejected based upon similar rational as above independent claim 1 and dependent claims 2-7 respectively.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Koller et al., *Real-time Vision-Based Camera Tracking for Augmented Reality Applications*, ACM, 1997, pages 87-94.

6,480,813 B1	Bloomquist et al.	703/1	11/2002	02/1999
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Method and apparatus for defining a precision drawing in a drawing program.

6,113,395	Hon	434/262	09/2000	08/1998
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Selectable instruments with homing devices for haptic virtual reality medical simulation.

6,236,940 B1	Fukunaga	345/427	02/2002	02/1998
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Virtualized endoscope system.

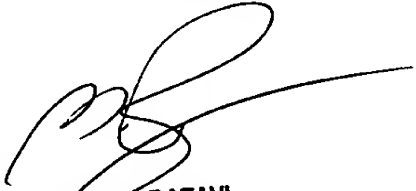
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Motilewa A. Good-Johnson
Examiner
Art Unit 2672

mgj
March 19, 2003



MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600